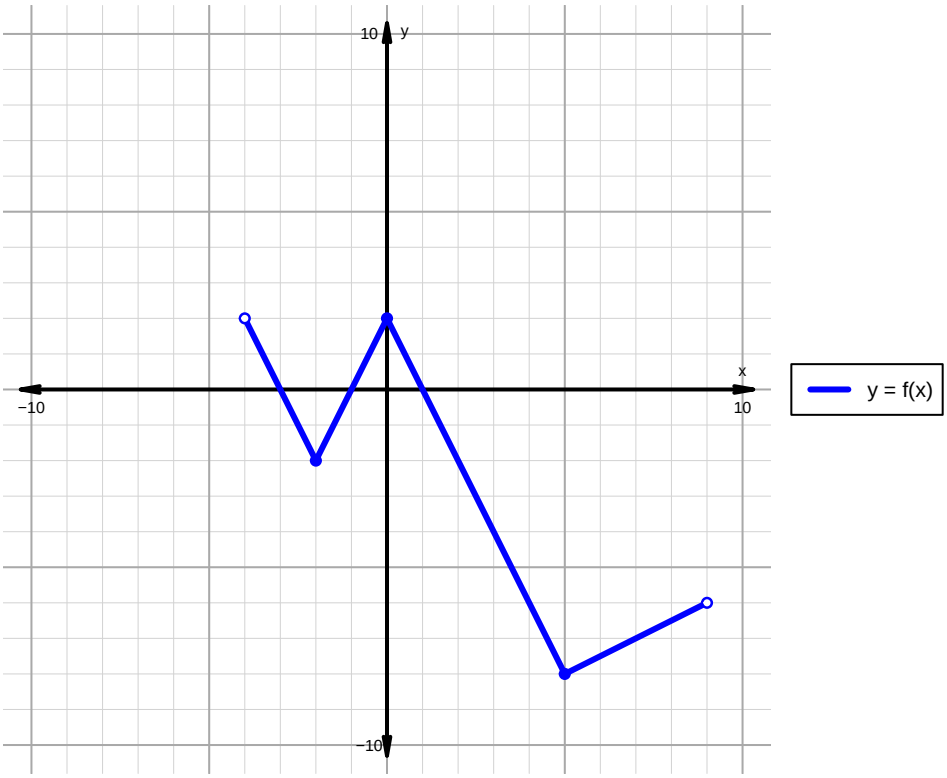
Name: Date:

Intervals, Transformations, and Slope Solution (version 153)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-4,-3)\cup(-1,1)$
Negative	$(-3,-1)\cup(1,9)$
Increasing	$(-2,0)\cup(5,9)$
Decreasing	$(-4,-2)\cup(0,5)$
Domain	$(-4,9)$
Range	$(-8,2)$

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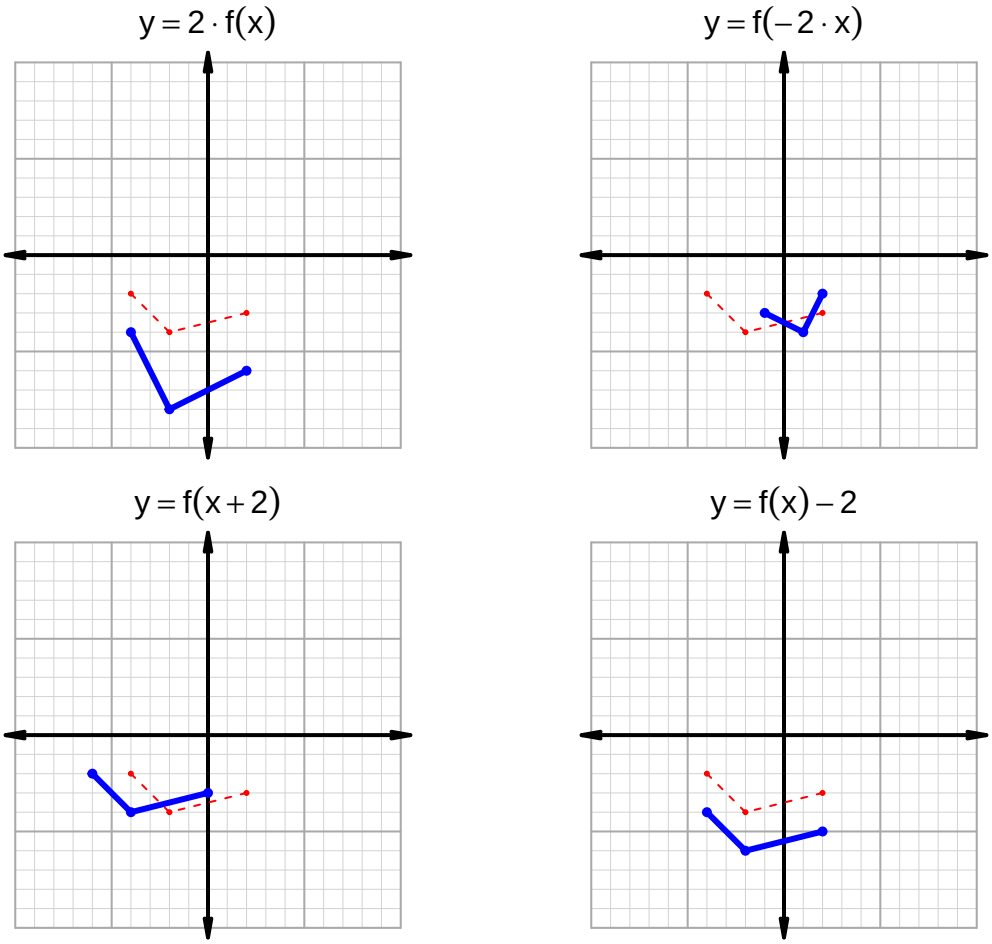
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 33$ and $x_2 = 89$. Express your answer as a reduced fraction.

x	$g(x)$
31	89
33	31
89	95
95	33

$\frac{g(89)-g(33)}{89-33} = \frac{95-31}{89-33} = \frac{64}{56}$

The greatest common factor of 64 and 56 is 8. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{8}{7}$$